

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-10. (Cancelled).

11. (Previously Presented): An object activity recognition method comprising the steps of:

- (a) obtaining feature vectors by motion estimation for video frames;
- (b) determining a state, to which each frame belongs, using the obtained feature vectors;

and

(c) determining an activity model, which maximizes the probability between activity models and a video frame provided from a given activity model dictionary using a transition matrix for the determined state, as the recognized activity, wherein the step (c) comprises a step of finding an activity model, which maximizes probability $P(O|\lambda)$ from the given activity model dictionary $\{\lambda_1, \lambda_2, \dots, \lambda_E\}$, when T is a positive integer indicating the number of frames forming the video sequence, Z_1, Z_2, \dots, Z_T are feature vectors of first frame, second frame, ..., T -th frame, respectively, and if video frame $O=\{Z_1, Z_2, \dots, Z_T\}$ is given and E is the number of state models, and wherein the transition matrix is obtained by using an expectation-maximization (EM) algorithm based on the observation symbol probability $\{b_j(\cdot)\}$ corresponding to scene j in the training process.